WHAT IS CLAIMED IS:

1. A system for transmitting and receiving encrypted information, comprising an encrypted information recording apparatus, an encrypted information reproducing apparatus, and a transmission line connecting the encrypted information recording apparatus and the encrypted information reproducing apparatus, the encrypted information recording apparatus transmitting a digital information signal to the encrypted information reproducing apparatus via the transmission line, the digital information signal resulting from embedding encrypted information in a digital contents signal, the encrypted information reproducing apparatus receiving the digital information signal and reproducing the encrypted information from the digital information signal;

wherein the encrypted information recording apparatus comprises:

first means for dividing the digital contents signal into first data blocks;

second means for calculating a statistical quantity of the digital contents signal for every first data block generated by the first means;

third means for encrypting information to be embedded into the encrypted information;

fourth means for calculating a corrective quantity from the encrypted information and the statistical quantity calculated by the second means;

fifth means for changing first random numbers into second random numbers in response to the corrective quantity calculated by the fourth means, and for generating a signal representative of the second random numbers; and

sixth means for adding the signal representative of the second

random numbers to the digital contents signal for every first data block generated by the first means to embed the encrypted information in the digital contents signal and thereby generate the digital information signal; and

wherein the encrypted information reproducing apparatus comprises:

seventh means for dividing the digital information signal into second data blocks corresponding to the first data blocks generated by the first means;

eighth means for calculating the statistical quantity of the digital information signal for every second data block generated by the seventh means;

ninth means for deciding the encrypted information in the digital information signal in response to the statistical quantity calculated by the eighth means for every second data block generated by the seventh means to extract the encrypted information from the digital information signal; and

tenth means for decrypting the encrypted information extracted by the ninth means into the original information to be embedded.

2. In a system comprising an encrypted information recording apparatus, an encrypted information reproducing apparatus, and a transmission line connecting the encrypted information recording apparatus and the encrypted information reproducing apparatus, the encrypted information recording apparatus transmitting a digital information signal to the encrypted information reproducing apparatus via the transmission line, the digital information signal resulting from embedding encrypted information in a digital contents signal, the encrypted information reproducing apparatus receiving the digital information signal

and reproducing the encrypted information from the digital information signal, a method of transmitting and receiving encrypted information which comprises a recording-related method and a reproducing-related method;

wherein the recording-related method comprises the steps of:

dividing the digital contents signal into first data blocks;

calculating a statistical quantity of the digital contents signal for every first data block;

encrypting information to be embedded into the encrypted information;

calculating a corrective quantity from the encrypted information and the calculated statistical quantity;

changing first random numbers into second random numbers in response to the calculated corrective quantity, and generating a signal representative of the second random numbers; and

adding the signal representative of the second random numbers to the digital contents signal for every first data block to embed the encrypted information in the digital contents signal and thereby generate the digital information signal; and

wherein the reproducing-related method comprises the steps of:

dividing the digital information signal into second data blocks corresponding to the first data blocks;

calculating the statistical quantity of the digital information signal for every second data block;

deciding the encrypted information in the digital information signal in response to the calculated statistical quantity of the digital information signal for every second data block to extract the encrypted information from the digital information signal; and

decrypting the extracted encrypted information into the original

information to be embedded.

3. A computer program for embedding encrypted information in a digital contents signal, comprising the steps of:

dividing the digital contents signal into data blocks;

calculating a statistical quantity of the digital contents signal for every data block;

encrypting information to be embedded into the encrypted information;

calculating a corrective quantity from the encrypted information and the calculated statistical quantity;

changing first random numbers into second random numbers in response to the calculated corrective quantity, and generating a signal representative of the second random numbers; and

adding the signal representative of the second random numbers to the digital contents signal for every data block to embed the encrypted information in the digital contents signal.

4. An apparatus comprising:

first means for dividing a digital contents signal into segments;

second means for detecting a condition of the digital contents signal for every segment generated by the first means;

third means for determining a corrective quantity in response to auxiliary information and the condition detected by the second means;

fourth means for changing first random numbers into second random numbers in response to the corrective quantity determined by the third means, and for generating a signal representative of the second random numbers; and

fifth means for adding the signal representative of the second random numbers to the digital contents signal for every segment generated by the first means to embed the auxiliary information in the digital contents signal.

5. An apparatus as recited in claim 4, wherein the condition detected by the second means is an average-luminance-related condition.

6. An apparatus as recited in claim 4, further comprising sixth means for encrypting the auxiliary information before the auxiliary information is used by the third means.

7. An apparatus comprising:

first means for dividing a digital contents signal into segments;

second means for detecting an average luminance value of the digital contents signal for every segment generated by the first means;

third means for determining a corrective quantity in response to a bit of auxiliary information and the average luminance value detected by the second means for every segment generated by the first means, wherein bits of the auxiliary information are assigned to the segments generated by the first means respectively;

fourth means for changing first random numbers into second random numbers in response to the corrective quantity determined by the third means, and for generating a signal representative of the second random numbers; and

fifth means for adding the signal representative of the second random numbers to the digital contents signal for every segment generated by the first means to embed the auxiliary information in the digital contents

signal and thereby generate a composite digital signal, wherein an average luminance value of every segment of the composite digital signal is either odd or even depending on a logic state of a corresponding bit of the auxiliary information.

8. An apparatus as recited in claim 7, further comprising sixth means for encrypting the auxiliary information before the auxiliary information is used by the third means.

9. An apparatus comprising:

first means for dividing a digital information signal into segments;

second means for detecting an average luminance value of the digital information signal for every segment generated by the first means;

third means for deciding whether the average luminance value detected by the second means is odd or even; and

fourth means for detecting auxiliary information in the digital information signal in response to results of the deciding by the third means.

10. An apparatus as recited in claim 9, further comprising fifth means for decrypting the auxiliary information detected by the fourth means.

11. A computer program comprising the steps of:

dividing a digital information signal into segments;

detecting an average luminance value of the digital information signal for every segment;

deciding whether the detected average luminance value is odd or even;

detecting encrypted information in the digital information signal in

response to results of the deciding; and

decrypting the detected encrypted information.